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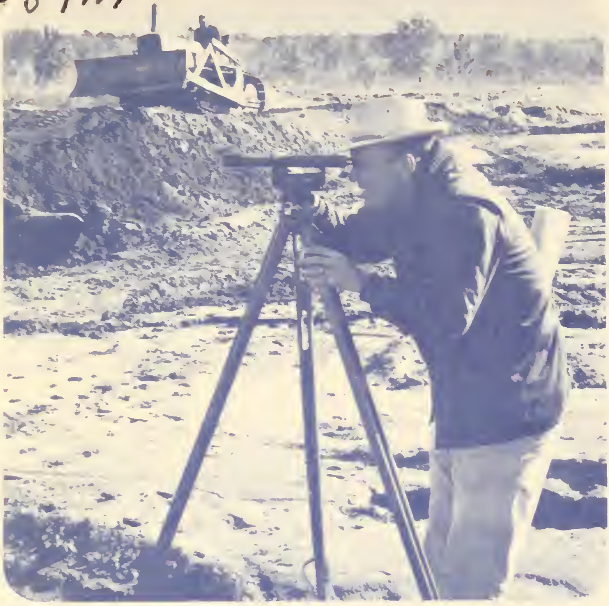

An ENGINEERING CAREER for YOU in the SOIL CONSERVATION SERVICE

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SOIL CONSERVATION SERVICE
U.S. DEPARTMENT OF AGRICULTURE
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ENGINEERING GRADUATES . . .

A Job for You

Soil Conservation Service needs ENGINEERS

Structural design
Hydrology • Drainage
Hydraulics • Erosion control
Construction • Geology
Irrigation • Soil mechanics
Water-supply forecasting

Soil Conservation Service offers

- Action in an action agency.
- Training by recognized engineers.
- A variety of experience in many engineering fields on the Nation's farms and ranches and upstream watersheds.
- Opportunity to do all the engineering work on small jobs or to do specialized engineering work on large projects.
- Opportunity for rapid promotion in beginning grades based on intensive training.

What SCS Engineers Do

Engineers are key men in the Soil Conservation Service—the Department of Agriculture's technical arm of action for soil and water conservation.

They have increasingly important roles in carrying on a national soil and water conservation program, including watershed-protection and flood-prevention projects and river-basin investigations.

SCS engineers may work "across the board," or they may specialize. It depends on the kind of job to be done. For example, on small jobs an engineer may do all the engineering work, from design through construction. On major watershed jobs he may work as a specialist in only one engineering field.

SCS engineers design and supervise construction of—

- Earth-fill and reinforced-concrete dams for flood prevention and water storage.
- Spillways, drop structures, outlets, and erosion-control, water-control, and water-supply structures.
- Drainage, irrigation, terrace, and water-disposal systems.
- Streambank protection and channel stabilization works, canals, pipelines, diversions, and waterways.
- Watershed projects involving all the integrated structural measures needed to provide for the desired degree of control of the area.

SCS engineers make hydrologic studies and supervise soil mechanics work.

See the following pages for brief descriptions of jobs SCS engineers do.

CAL–7046

Structural Design

Assembling basic data and preparing detailed designs for:

- Flood-prevention, water-storage, and diversion dams.
- Irrigation and drainage systems.
- Flood ways and channel-stabilization works.
- Spillways.
- Drop structures.
- Chutes.
- Culverts.

Determining loads on structures and computing stresses.

Supervising preparation of detailed construction drawings, quantity estimates, and bid schedules.

Preparing construction specifications.

COLO–11179

Hydrology

Studying any or all phases of the hydrologic cycle:

- Precipitation, including all types and amounts and frequencies of occurrence.
- Streamflow, including flood flows and monthly, seasonal, and annual yields.
- Watershed influences, including effects of soil, cover, land use, land treatment, and channel hydraulics.

Flood routing to determine the effects of retarding dams, floodway, and other systems of control work on flood flows.

Using the latest electronic computer techniques in hydrologic studies and in formulating watershed programs for flood prevention and water management.

IA–2530

CAL–7050

Hydraulics

Assembling basic data and preparing detailed hydraulic designs for:

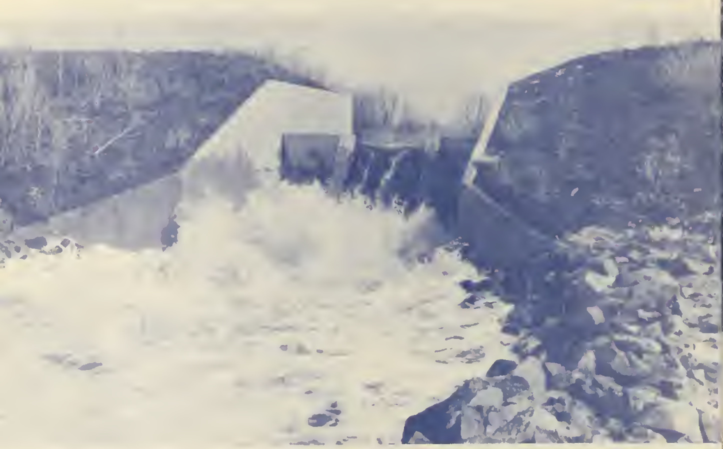
- Flood-prevention and water-storage dams.
- Spillways.
- Water-conveyance channels.
- Drop structures.
- Siphons, flumes.
- Chutes.
- Energy dissipators.
- Culverts.

Determining water-surface profiles.

Determining head-discharge relationships of structures.

Determining discharge capacity of structures.

Solving problems of inflows into and through reservoirs.



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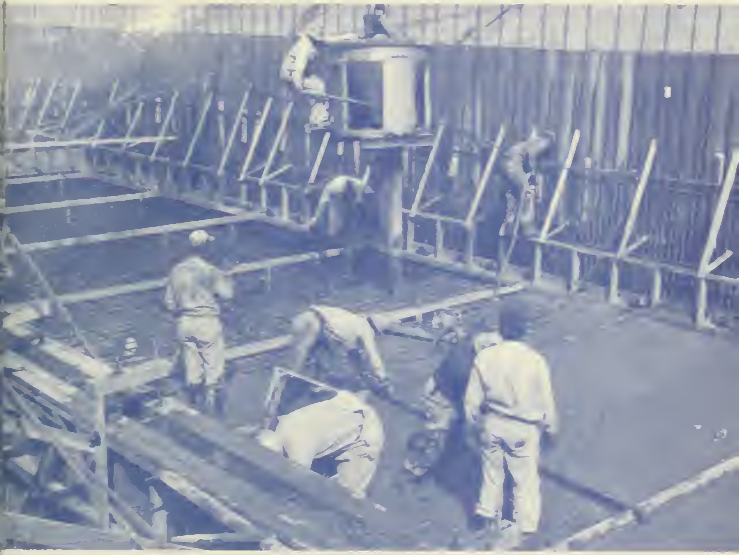
CAL–7048



CAL–7049

Construction

Supervising construction of:

- Earth-fill and reinforced-concrete dams.
- Drop structures.
- Irrigation diversions and headworks.
- Water-disposal systems.
- Water-control structures.
- Drainage and irrigation systems.
- Earthwork.
- Streambank-stabilization work.

Preparing construction specifications.

WYO—648

NEB—1837

Irrigation

Designing and supervising construction of farm and ranch irrigation systems.

Developing water-supply, conveyance, and distribution systems and management programs.

- Land leveling.
- Diversion dams.
- Storage reservoirs.
- Canals.
- Pipelines.
- Control structures.

Developing water-application plans.

Computing water requirements.

Drainage

Designing and supervising construction of drainage systems of different sizes.

- Determining capacity, depth, spacing, and side slope of open or closed drains.
- Determining benefits and damages.
- Providing for removal of saline and alkaline salts.
- Investigating ground-water movement and subsoil layer.
- Investigating quality of materials.
- Preparing specifications.
- Auxiliary works such as pumping plants, control structures, and dikes.

SC–576–2

MD–30337

TH-442

Erosion Control and Water Conservation

Helping landowners and operators plan and establish the engineering phases of conservation plans.

Designing and supervising construction of:

- Farm ponds.
- Terrace systems.
- Diversion terraces.
- Waterways.
- Grade-stabilization structures.

Investigating effectiveness of erosion-control and water-conservation measures.

Geology

Investigation and interpretation of surface conditions in relation to:

- Design and construction of engineering structures.
- Ground water supplies—management and recharge.
- Sediment yield—sources, damage, and control.

LA-62391

NMEX-13704

Soil Mechanics

Helping to make dam-site investigations.
Supervising laboratory tests to determine:
- Amount and rate of consolidation under loads.
- Structural quality of earth materials.
- Density-moisture relationships; permeability.

Interpreting tests and recommending for:
- Construction of earth-fill dams.
- Side slopes of embankments.
- Foundation stability.
- Drainage for structures.
- Cutoff trenches.
- Blanketing and reservoir-basin treatment.

Water-Supply Forecasting

- Establish snow course networks.
- Establish soil moisture and temperature stations.
- Analyze snow-survey data.
- Develop forecast parameters and formula.
- Develop water-supply forecasts.
- Adapt automatic data processing.
- Operate automatic radio-telemetry systems.

ORE-75061

Employment Facts

Information.—Ask your college placement officer or postmaster or write to the nearest Soil Conservation Service office for the announcement of the SCS engineering examination and an application blank.

How to apply.—If you have the right qualifications, fill out the application (Form 171) carefully, and mail it as directed in the announcement.

Equal employment opportunity.—Applicants will be considered without regard to race, sex, creed, color, national origin, politics, marital status, age, membership or nonmembership in an employee organization, or any other nonmerit factor.

Work locations.—You may work at any one of several thousand locations in the United States, including Puerto Rico and the Virgin Islands. Your college placement officer will have a list of the main offices of SCS where you can get additional information.

Training.—SCS provides excellent opportunities for intensive and specialized training in many fields of engineering under competent, experienced engineers, both on the job and in group training centers.

Advancement.—SCS has an organized "promotion-from-within" policy. Engineers may stay in professional and specialized engineering jobs or, based on their aptitudes and abilities, move into technical administrative jobs.

Benefits.—SCS employees are under Federal civil service. Advancement is based wholly on merit. They are eligible for such benefits as sick and annual leave, group life insurance at a nominal rate, periodic salary increases, disability compensation if injured in line of duty, and liberal retirement annuities.

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